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Mastering developmental transitions in young and middle adulthood: The interplay of openness to experience and traditional gender ideology on women's self-efficacy and subjective well-being

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Abstract: [Correction Notice: An Erratum for this article was reported in Vol 49(1) of *Developmental Psychology* (see record 2013-00166-002). In the article, Study 2 is mistakenly described as a 9-month longitudinal study. However, this study covered 11 months.] The present research focuses on 2 factors that might help or hurt women to cope with the uncertainties associated with developmental transitions in modern societies (i.e., starting one's first job, graduating from high school, reentry to work after parental leave). We investigate (a) the role of openness to experience in coping with challenging transitions and (b) the (mal)adaptive consequences of adopting a traditional gender ideology. Starting with the assumption that transitional uncertainty has different consequences for women high or low in openness to experience, a first experiment ($N = 61$; 18–30 years) demonstrated that self-efficacy and well-being decrease after being confronted with transitional uncertainty among women low in openness. Two longitudinal studies investigated the (mal)adaptive consequences of adopting a traditional gender ideology for women high or low in openness in dealing with challenging transitions. Study 2 examined whether endorsing or rejecting traditional gender role beliefs might help female (but not male) students to maintain a sense of self-efficacy and subjective well-being during the transition of graduating from high school ($N = 520$, 17–22 years). Study 3 ($N = 297$; 20–53 years) tested the same model for women in middle adulthood during the transition from parental leave to reentry into work life. For both studies, latent growth analyses showed that endorsing traditional gender role beliefs contributed to self-efficacy and subjective well-being among women low in openness. By contrast, for women high in openness, rejecting traditional gender role beliefs had a positive effect on their relative level of self-efficacy and subjective well-being. Functions of ideologies in the context of challenging transitions are discussed.

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RUNNING HEAD: MASTERING DEVELOPMENTAL TRANSITIONS

Mastering Developmental Transitions in Young and Middle Adulthood:

The Interplay of Openness to Experience and Traditional Gender Ideology on Women's Self-Efficacy and Subjective Well-being

in press

Developmental Psychology

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Abstract

How do women master challenging developmental transitions in young and middle adulthood?

The present research focuses on two factors that might help or hurt women to cope with the uncertainties associated with developmental transitions in modern societies (i.e., starting one's first job, graduating from high school, re-entry to work after parental leave). We investigate (1)

the role of openness to experience in coping with challenging transitions and (2) the

(mal)adaptive consequences of adopting a traditional gender ideology. Starting with the

assumption that transitional uncertainty has different consequences for women high or low in

openness to experience, a first experiment ($N = 61$; 20-30 years) demonstrated that self-efficacy

and well-being decrease after being confronted with transitional uncertainty among women low

in openness. Moreover, in two longitudinal studies we investigated the (mal)adaptive

consequences of adopting a traditional gender ideology for women high or low in openness in

dealing with challenging transitions. Specifically, Study 2 examined whether endorsing or

rejecting traditional gender role beliefs might help female (but not male) students to maintain a

sense of self-efficacy and subjective well-being during the transition of graduating from high

school ($N = 520$, 64.1% female; 17-22 years). Study 3 ($N = 297$; 20-53 years) tested the same

model for women in middle-adulthood during the transition from parental leave to re-entry into

work life. For both studies, latent growth analyses showed that endorsing traditional gender role

beliefs contributed to self-efficacy and subjective well-being among women low in openness. By

contrast, for women high in openness rejecting traditional gender role beliefs had a positive

effect on their relative level of self-efficacy and subjective well-being. The discussion focuses on

the functions of ideologies in the context of challenging transitions.

(281 words)

Key words: Developmental transition, openness to experience, gender ideology, self-efficacy,

subjective well-being

Mastering Developmental Transitions in Young and Middle Adulthood.

The Interplay of Openness to Experience and Traditional Gender Ideology on Women's Self-Efficacy and Subjective Well-being

Across the life span, people go through challenging transitions that require entering novel environments and contexts. Developmental transitions are associated with uncertainty because they often involve new and unpredictable social contexts and tasks that follow rules about which one knows very little. One of the challenges of transitions is that, despite the unfamiliarity of the new situation, they often require important decisions such as what to do after graduating from high-school or how to position oneself in a new job. The insecurity experienced during such educational and work-related developmental transitions in young and middle adulthood might be particularly high for women, for whom, compared to men, less clear social expectations exist in these life domains. How do women master the demands of important developmental transitions in the educational and occupational domain?

Challenging transitions may have different consequences for people who are motivated to *approach* new and unknown situations because they offer new possibilities compared to people who would like to *avoid* such situations because they might pose a demands that are difficult to meet. For example, people who are high in openness to experience might approach these situations with optimism and curiosity by focusing on the new emerging possibilities. In contrast, people who are low in openness to experience might be more likely to feel threatened by uncertainty and, hence, try to avoid it. One way of avoiding the disconcerting uncertainty associated with transitions is to search for structures that help reduce the degrees of freedom and the complexity of new situations (Wilson, 1973). Clear behavioral guidelines such as those provided by strong beliefs and ideologies constrain the range of possible actions. For example, traditional gender roles define “what one should do with one's life to be successful in that role” (Eccles, 1987; p.152). However, since traditional gender ideology promotes a male-advantaging

gender hierarchy with respect to power, status, and the division of labor (Wood & Eagly, 2002), the effects of adopting these beliefs can be detrimental to women during educational and occupational transitions (Eccles, 2007). Thus, although, traditional gender ideology can have negative consequences for women, it also provides strong behavioral guidelines. Traditional gender ideology defines a woman's responsibilities mainly on the basis of being a mother and housewife and not on the basis of occupational roles.

The present research investigates how traditional gender ideology might interact with openness to experience during challenging developmental transitions in young and middle-aged women's educational and occupational lives. More specifically, the present research addresses the (mal)adaptive consequences of adopting a traditional gender ideology during developmental transitions for women who are low or high in openness to experience. For women who report low openness to new experiences, adhering to a traditional gender ideology may protect their self-efficacy and subjective well-being by providing clear guidelines and structure. For women high in openness, this ideology might represent a barrier to the potential options offered by the novel situation and by impairing their relative level of self-efficacy and subjective well-being.

Individual Differences in Coping with Challenging Transitions

Transitions are defined as "points in the life course when roles are transformed, redefined, or left behind for new ones" (Perrig-Chiello & Perren, 2005, p. 170). Transitions represent major developmental tasks across the life span that provide many opportunities. However, these changes are often beset with uncertainties because transitions are associated with an unsure future and the need to make decisions in the face of changing circumstances. Leaving one context behind and entering a new one is often associated with a lack of sufficient knowledge and skills regarding the behaviors necessary to master the challenges of the new situation. In such demanding situations, a person's sense of control and well-being might be at risk. Self-efficacy denotes beliefs in one's capability to master challenges and difficulties in the

future in order to attain one's goals (Bandura, 1995, 1997). High levels of self-efficacy contribute to one's confidence that one will successfully master difficult tasks and new situations. Self-efficacy is a powerful psychological concept for predicting both performance and subjective well-being (Bandura, 1997; Gecas, 1989). The association between self-efficacy beliefs and subjective well-being has been demonstrated across different samples and cultures (Luszczynska, Gutiérrez-Doña, & Schwarzer, 2005). Moreover, there is evidence that self-efficacy is positively related to job satisfaction (Judge & Bono, 2001).

There are individual differences in the management of novel information with respect to openness to experience, with persons high in openness to experience being motivated to approach and resolve new and unknown situations (McCrae, 1996; Rokeach, 1960; Sorrentino & Roney, 1999). Moreover, openness to experience is positively associated with cognitive flexibility and open mindedness (McCrae & Costa, 1997) and negatively related to rigidity, uncertainty, and inflexibility (Hodson & Sorrentino, 1999; Whitbourne, 1986). As a consequence, people low in openness are motivated to avoid novelty and instead approach certainty. People low in openness should hence feel threatened by the uncertainty associated with life transitions.

Low levels of openness to experience involve a motivation to avoid exploration and complexity by adhering to predictable environments. For persons low in openness, then, adopting a certain ideology may serve as a means to maintain a sense of predictability and control, and thereby protect them psychologically from the challenges associated with transitioning into a new situation. Accordingly, a strong ideology may shield persons from the uncertainty and potential of failure associated with mastering developmental transitions.

Ideology and gender

Ideology is defined as an abstract, internally coherent system of beliefs that gives meaning and value to social reality (e.g., Gecas, 2000; Jost, 2006; Schulze, 1969). Ideology

provides people with a clear structure, an idea of what is right and wrong, as well as guidelines for the appropriateness of behavior in a given situation. In other words, ideology represents a cognitive schema for action that (a) structures social life and (b) provides people with behavioral guidelines.

Gender is a socially and psychologically meaningful category that is linked to men's and women's (self-)perceptions (Deaux & LaFrance, 1998; Eccles, 2009). Gender stereotypes are defined as generalizations about various characteristics including attributes, roles, and traits that are associated with men or women (Deaux, 1985). For example, women are more likely to be perceived in light of communal attributes whereas men are seen as being more agentic (e.g., Abele, 2003; Bakan, 1966; Eagly, 1987; Eagly & Steffens, 1984; Glick & Fiske, 2001).

Stereotypes may constitute the basis for an ideology, a complex set of ideas shared by a social group (Billig, 1984; Hall, 1977; Larrain, 1979). In the present research, *traditional gender ideology* denotes the definition of gender roles legitimizing an unequal distribution of resources, status, and power between men and women. According to this view, women are seen as subordinate to men and as not being entitled to social positions of power. Thus, traditional gender ideology provides women with roles that relate to stereotypical female characteristics as warmth, kindness, empathy, and sensitivity. Such roles involve motherhood, housekeeping and lower career aspirations. Men, on the other hand, are allotted roles related to competence, assertiveness, independence, and dominance (Bem, 1974). In contrast to women, male roles involve high educational and occupational aspirations.

A functional approach: Why might men and women adopt traditional gender ideologies?

People often promote attitudes and ideologies that serve their self-interest. For example, members of privileged groups are more likely to endorse beliefs that protect their advantaged position (Schmitt & Wirth, 2009). By contrast, members of disadvantaged groups are often motivated to improve their social position by eliminating their disadvantage (Tajfel & Turner,

1986). It has been shown that, by endorsing traditional gender ideology, men try to protect their privileged position. Women are more likely to reject these beliefs in order to improve their disadvantaged situation (Eagly, Diekmann, Johannesen-Schmidt, & Koenig, 2004; Grant & Brown, 1995; Kelly & Breinlinger, 2006). Not surprisingly, on average women are less likely than men to endorse traditional gender ideology (Eagly et al., 2004; Katz-Wise, Priess, & Hyde, 2010; Twenge, 1997). Despite this general tendency, however, some women do endorse traditional gender ideology, which assigns them a disadvantaged and inferior position compared to men. At first glance, this is puzzling as it suggests that people sometimes endorse a set of beliefs and attitudes that is directed against their status.

In the present research, we argue that endorsing an ideology that provides clear guidelines for behavior might help women with a strong need to avoid novel situations to cope with the insecurities often experienced during educational and occupational developmental transitions. More specifically, because women low in openness should be more threatened by the uncertainty of life transitions, traditional gender role ideology should buffer the negative effect of uncertainty on self-efficacy and subjective well-being. Ideology may function as a cognitive structure for understanding the world by making it subjectively more controllable and predictable. Hence, an ideology that explains the world as organized and predictable might also increase one's subjective belief that one is able to get through the transition successfully.

The present research

The present research addresses (i) individual differences in the management of novel information and uncertainty as well as (ii) the (mal)adaptive effects of ideological orientations in the context of transitional uncertainty. The central hypothesis of the present research is that women who are relatively low in openness to experience can protect their self-efficacy and subjective well-being in times of developmental transitions by adopting ideologies that provide them with clear behavioral guidelines (here: a traditional gender ideology). To test this

hypothesis, we investigated the psychological consequences (self-efficacy, subjective well-being) of women's endorsement of traditional gender ideology during educational and career-related transitions in young and middle adulthood depending upon the level of openness to experience.

Decomposing this hypothesis, we predicted: (1) Subjective well-being and self-efficacy decline in women with low openness for experience (but not for women high in openness with experience) when confronted with transitional uncertainty. This moderation hypothesis of the negative impact of transitional uncertainty by the level of openness was tested in Study 1, an experiment inducing transitional uncertainty regarding starting a job after graduating from university. (2) Endorsing a traditional gender ideology buffers against the negative impact of transitional insecurity on self-efficacy and subjective well-being in women with low openness. In contrast, endorsing a traditional gender ideology during a developmental transition might have negative effects on self-efficacy and subjective well-being in women with high openness. We investigated this second hypothesis in two longitudinal studies targeting different developmental transitions in young and middle adulthood, namely the phase of graduating from high-school (Study 2) and returning to work after parental leave (Study 3).

Study 1

Study 1 used an experimental design to test the hypothesis that transitional uncertainty in the educational / professional domain has a negative effect on the self-efficacy and subjective well-being of young women. Importantly, we hypothesized that this effect is moderated by openness to experience. We expected that experimentally induced uncertainty leads to decreased levels of self-efficacy and subjective well-being in women low in openness but not in women with high openness (moderation hypothesis). In order to test this hypothesis, we first assessed participants' openness to new experiences and baseline measures of self-efficacy and subjective well-being. In a second step, we experimentally manipulated uncertainty concerning the

transition from college to work (vs. a neutral control condition) and subsequently assessed participants' perception of self-efficacy and their subjective well-being.

Method

Manipulation and Stimulus Material

In order to induce transitional uncertainty, we constructed a short newspaper article (468 words) that emphasized the uncertainty inherent in the transition from college to work. More specifically, an article entitled "*The new world of uncertainty*" discussed the difficult situation of college graduates starting their transition into the workforce in times of uncertainty and change. In the control condition, participants also read a newspaper article of similar length (457 words) about work, but in this case unrelated to transitional difficulties but to safety measures in work environments ("*Ways of work organization*").¹

Participants and Procedure

Overall, $N = 61$ female undergraduate students from the University of Zurich aged 18 to 29 years ($M = 21.6$, $SD = 2.19$) participated in the experiment. Selection criteria for participation were being (1) female, and (2) between 18 and 30 years of age. The experiment consisted of a pretest (T_1), which was administered online, and an experimental session in the laboratory (T_2). The study was introduced as a study concerning attentional processes in the work context. When participants came to the laboratory, they gave informed consent and were then asked to read carefully one of the two articles carefully ("*Please read the following text carefully and answer the following questions.*"). Subsequently, participants were asked to provide ratings on scales measuring, for example, traditional gender ideology, self-efficacy, and subjective well-being. Again, participants rated the items on a seven-point scale ranging from 1 (*not at all*) to 7 (*very much*). We included validated parallel versions self-efficacy and subjective well-being in order to be able to test whether the manipulation of uncertainty does, in fact, change subjective well-being and self-efficacy depending upon the level of openness.

Specifically, parallel versions of a scale allow for testing the same participants in two different situations by avoiding confounding effects of repeating the same scale.

Measures

All Cronbach's alphas reported in this paper were computed on the basis of the present data.

Openness to Experience. Openness to new experiences was measured by using a three item scale from the scale by Lang, Lüdtke, and Asendorpf (2001; Cronbach's alpha = .65).

Self-Efficacy. Three self-developed items measured participants' self-efficacy in the context of the transition from college to work (e.g., "*I am confident that I will manage successfully the transition to work*"). On the basis of a preceding pilot study, we developed two reliable parallel forms of the self-efficacy scale that represent alternate methods to measure the construct of self-efficacy. One of the parallel versions of the scale had been used in the pretest (Cronbach's alpha = .81) and one after the manipulation of transitional insecurity (Cronbach's alpha = .74) so as to be able to compare levels of self-efficacy before and after the manipulation.

Subjective Well-Being. Subjective well-being was assessed with the 6-item short version of the Multidimensional Mood State Questionnaire (MDBF; Steyer, Schwenkmezger, Notz, & Eid, 1994). Again, the validated parallel version of the scale was used in the pretest (Cronbach's alpha = .91) and after manipulation of transitional insecurity (Cronbach's alpha = .88) in order be able to compare levels before and after the manipulation.

Results

Mean differences. We computed a multivariate analysis of variance in order to test whether the activation of uncertainty (vs. control condition) had an effect on self-efficacy and subjective well-being. The multivariate result (Pillai's trace) was significant for experimental condition, $F(2, 58) = 3.59, p = .03, \eta_p^2 = .11$. Analyses yielded a significant effect for self-efficacy such that participants in the uncertainty condition reported lower levels of self-efficacy

($M = 4.43$, $SD = 1.31$) than did those in the control condition ($M = 5.13$, $SD = .61$), $F(1, 59) = 7.18$, $p = .01$, $\eta_p^2 = .11$. Additionally, participants in the uncertainty condition reported lower levels of subjective well-being ($M = 4.43$; $SD = 1.33$) than did those in the control condition ($M = 5.09$, $SD = .93$), $F(1, 59) = 5.04$, $p = .03$, $\eta_p^2 = .08$. Thus, the results suggest that the uncertainty manipulation had a negative effect on participants' sense of self-efficacy and well-being. Notably, self-efficacy and well-being were positively highly correlated ($r = .77$, $p < .001$).

The moderating role of openness to experience. We performed regression analyses in order to test the proposed moderating role of openness to experience. Specifically, to test the interaction effects of experimental condition and openness to experience as predictors of self-efficacy and subjective well-being, regression analyses were performed by controlling for baseline ratings of the dependent variables. A first regression analysis that included self-efficacy as a dependent variable yielded a significant interaction effect of experimental condition and openness to experience ($B = .27$, $SE = .11$; delta $R^2 = .04$, $p = .02$). Moreover, a second regression analysis that tested the effect of condition and openness to experience on subjective well-being also showed a significant interaction effect ($B = .29$, $SE = .14$; delta $R^2 = .03$, $p = .04$). Figures 1 (a) and (b) illustrate the interaction effects by depicting the effect of experimentally induced uncertainty on self-efficacy and subjective well-being moderated by openness to experience. Specifically, simple slope analyses yielded significant effects for openness, indicating that women who were less open reported significant lower levels of self-efficacy ($B = -.33$, $SE = .13$; $p = .02$) and subjective well-being ($B = -.47$, $SE = .15$; $p = .003$) in the uncertainty relative to the control condition.

Brief Discussion of Study 1

Individual differences in openness to experience predicted different consequences of induced transitional uncertainty. First, experimentally induced uncertainty had a negative effect

on participants' self-efficacy and subjective well-being. Second, results of this experiment provide first evidence for the moderating role of openness to experience. Women low in openness who were in the uncertainty condition reported lower self-efficacy and subjective well-being than women high in openness. This confirms our first hypothesis regarding the moderating role of openness to experience in the context of transitional uncertainty on self-efficacy and subjective well-being.

The next two studies were designed to complement this experiment using actual developmental transitions. More specifically, we investigated the interplay of endorsing a traditional gender ideology and openness to experience for women's self-efficacy and subjective well-being during the transition of graduating from high school and during the transition of returning to work after maternal leave. We expected that endorsing a traditional gender ideology has different consequences for women high or low in openness who actually undergo a developmental transition in the educational and occupational domain. Longitudinal designs were implemented in order to investigate the effects of endorsing a traditional gender ideology over the course of the transition. Moreover, we wanted to investigate if findings replicate across different educational / work-related transitions that take place at different times during adulthood. Therefore, we tested our hypothesis first in a sample of young women graduating from high school (Study 2) and, second in a sample of middle-aged women re-entering work after a maternity leave (Study 3).

Study 2

According to the functional perspective, a strong belief system such as traditional gender ideology serves personal motives, goals, and needs. For women low in openness, traditional gender ideology may serve as a guideline for action that protects their sense of control and self-efficacy in times of change and insecurity during a developmental transition. Accordingly, we hypothesize that endorsing traditional gender ideology might be beneficial for women low in

openness, as these women have a strong need to avoid situations associated with a large number of degrees of freedom, many possible choices, and only few guidelines. The transition of graduating from high school represents such a situation. Adopting a traditional gender role might help the young women low in openness during this developmental transition to cope with the insecurities associated with graduating from high school.

A eleven-month longitudinal study with three measurement occasions investigated the interplay of openness to experience and traditional gender ideology on changes in self-efficacy and on subjective well-being during the transition from high school to college or work. By implementing a longitudinal design, we were able to test the effect of openness to experience and endorsement of traditional gender ideology on change in self-efficacy across time. Participants completed three questionnaires during the transition: Before graduating from high school (T_1), three months after graduation (T_2), and nine months after graduation (T_3).

Method

Procedure

The present study is part of a larger longitudinal project on high school graduates' occupational development (for more information on the project see Freund, Weiss, & Wiese, 2012; Wiese & Freund, 2011). Thirty-two high schools located in German-speaking cantons of Switzerland were contacted. Sixteen of the schools contacted participated in the study. After receiving permission from the principal, a teacher asked the students whether they wanted to participate in the study. Participation was voluntary and students provided informed consent. At T_1 , testing was done in the classroom in groups of about 25 students. The instruments of data collection included a paper-and-pencil questionnaire and computerized tasks; data collection took about one hour. At T_2 and T_3 , participants were contacted via e-mail and asked to fill out an online questionnaire. Participation was compensated at T_1 with 25 Swiss francs (then equivalent to 25 USD), at T_2 with the opportunity to enter a raffle for 100 movie theater

vouchers (worth 20 Swiss francs each) and various cash prizes (worth a total of 500 Swiss francs), and at T₃ with 10 Swiss francs.

Participants

At T₁, the sample consisted of $N = 520$ male (35.9%) and female high-school students. Participants were between 17.4 and 22.3 years of age ($M = 19.15$, $SD = 0.75$). About half of the total sample lived in rural (50.7%) and half in urban areas. At T₂, $N = 402$ participants (36.8% male) completed the questionnaire. At T₃, $N = 359$ participants (34.5% male) completed the questionnaire.

Measures

Openness to experience and traditional gender ideology were assessed at T₁. Self-efficacy was assessed at all three measurement occasions during the nine-month interval. Unfortunately, due to an error during data-collection, subjective well-being was assessed only at T₃. If not noted otherwise, participants rated the items on a six-point scale ranging from 1 (*not at all*) to 6 (*very much*). Again, Cronbach's alphas are reported on the basis of data of the current study.

Openness to Experience. This scale contained four items measuring openness to new experiences (John & Srivastava, 1999; Cronbach's alpha = .80).

Traditional Gender Ideology. Traditional gender ideology was assessed using 29 items from a scale measuring normative gender role attitudes (Athenstaedt, 2000; e.g., "*Men earn more than women because they are more committed to their jobs*"; "*The housework should be organized by woman*") and four items from a scale measuring mother-child attitudes (Sieverding, 1990; e.g., "*Women who are strongly committed to their jobs cannot be good mothers at the same time*"). Cronbach's alpha for the entire scale was .88.

Self-Efficacy. Four items measured self-efficacy (Schwarzer & Jerusalem, 1999; e.g., “*I am confident that I could deal efficiently with unexpected events*”). Cronbach’s alpha was .76, .77, and .80 for T₁, T₂, and T₃, respectively.

Subjective Well-Being. Subjective well-being was assessed at T₃ with the 12-item short version of the Multidimensional Mood State Questionnaire (MDBF; Steyer et al., 1994). This questionnaire measured three dimensions of current mood: good-bad mood (Cronbach’s alpha = .82), (2) alertness-tiredness (Cronbach’s alpha = .76), and (3) calmness-nervousness (Cronbach’s alpha = .75). For the latent growth models, the means of the three subscales served as indicators of the latent construct of subjective well-being.

Results

As to be expected, male students ($M = 3.43$, $SD = .65$) were more likely than female students ($M = 2.94$, $SD = .63$) to endorse traditional gender ideology, $t(518) = 8.50$, $p = .001$. In addition, different patterns of intercorrelations between variables emerged for men and women (see Table 1). For example, openness to experience was negatively associated with traditional gender ideology for women ($r = -.20$, $p < .001$), but not for men ($r = .03$, ns).

Data Analyses: Modeling Change over Time

Individual trajectories of self-efficacy across time were analyzed with latent growth models (LGM). In order to study inter-individual differences in intra-individual change, we estimated individual self-efficacy trajectories (Bollen & Curran, 2006; Duncan, Duncan, & Strycker, 2006). Furthermore, LGMs were used to assess the effects of openness to experience and traditional gender ideology on the initial mean level of (intercept) and change in (slope) self-efficacy across three measurement occasions. More specifically, we used a three-step modeling approach: In a first LGM, we tested for growth in self-efficacy across three measurement occasions by analyzing intercept (i.e., latent mean of self-efficacy at T₁) and slope (trajectory of self-efficacy T₁-T₃) modeled as a latent variable. In a second model, we predicted the intercept

and slope by traditional gender ideology and openness to experience. Finally, in a third model, we examined if change in self-efficacy affects subjective well-being.

Model evaluation was based on values of the χ^2 statistic, the comparative fit index (CFI), the root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR). Analyses were carried out using Mplus version 3 (Muthén & Muthén, 1998). We applied the full information maximum likelihood (FIML) missing data technique, which includes all available data (Bollen & Curran, 2006; Singer & Willett, 2003).

LGM 1: Change in self-efficacy. A first LGM was computed that predicted positive change in self-efficacy across the three measurement occasions. The model resulted in a growth curve with acceleration over time (i.e., 0, 1, 3). A test of the model revealed appropriate fit indices ($N = 513$ $\chi^2(1) = 2.98, p = .09$; CFI = .99; RMSEA = .06, $p = .28$; SRMR = .03). Moreover, parameter estimates for intercept (initial mean level) and slope (change) were statistically significant ($p < .001$). The model resulted in a significant positive mean slope ($M_{slope} = .04$) and mean intercept ($M_{intercept} = 4.42$). The correlation between intercept and slope was not significant, indicating that participants with a lower initial level did not show a stronger increase in self-efficacy over time. The positive mean slopes suggest an increase in self-efficacy across the nine-month interval. Specifically, the weights of 0, 1, and 3 indicate a strong acceleration in self-efficacy between T_2 and T_3 .

LGM 2: Interaction effect of openness to experience and traditional gender ideology on change in self-efficacy. A model was computed to predict change in self-efficacy over time as a function of openness to experience and traditional gender ideology. In order to test our hypotheses, we computed two-group LGMs (see Curran, Bauer, & Willoughby, 2003) for male and female students. The test revealed appropriate fit indices ($N_{female} = 333, N_{male} = 187$; $\chi^2(8) = 16.18, p = .04$; CFI = .98; RMSEA = .06, 90% CI [.01-.11], and SRMR = .03). First, for male and female students, openness to experience had a significant negative effect on the intercept

factor of self-efficacy ($\beta_{\text{intercept}} = .44$ and $\beta_{\text{intercept}} = .34$, $p < .001$, respectively). Second, as predicted the analysis yielded a significant interaction effect of openness to experience and traditional gender ideology on change in self-efficacy for female ($\beta_{\text{slope}} = -.23$, $p < .01$) but not for male students ($\beta_{\text{slope}} = -.10$, ns). This interaction effect of openness to experience and traditional gender ideology on change in self-efficacy is depicted in Figure 2. Specifically, the simple slope analyses indicate that endorsing traditional gender ideology led to an increase in self-efficacy among female students who were low in openness, but to a decrease for women high in openness ($B = -.08$, $SE = .01$; $p < .001$). By contrast, rejecting traditional gender ideology led to an increase in self-efficacy among female students who were high in openness ($B = .03$, $SE = .01$; $p < .01$).

LGM 3: Change in self-efficacy and well-being. We added subjective well-being (T_3) to the third model that only included female participants. More specifically, subjective well-being was predicted by intercept and slope of self-efficacy. The model closely fitted the data ($N_{\text{female}} = 333$, $\chi^2(20) = 36.26$, $p = .01$; CFI = .96; RMSEA = .05, $p = .48$ and SRMR = .04). Consistent with Model 2, the interaction of openness to experience and ideology had a significant effect on intercept and slope of self-efficacy ($\beta_{\text{slope}} = -.29$, $p < .01$). In addition and in line with our hypotheses, the model shows that among female students initial mean level (intercept) and change in self-efficacy (slope) positively predict subjective well-being measured at T_3 ($\beta_{\text{intercept}} = .26$; $p < .01$; $\beta_{\text{slope}} = .29$; $p < .05$). The model accounted for 10% of the variance in initial level of self-efficacy and 4% of the variance in change in self-efficacy.

Brief Discussion of Study 2

The results of Study 2 suggest that self-efficacy increases over the course of the transition of graduating from high school. Thus, overall, the transition increases rather than undermines young adults' belief in their capability to master challenges and difficulties. However, for women low in openness, the endorsement of a traditional gender role ideology seems to be

important for a sense of self-efficacy: Among female high-school students low in openness, the endorsement of traditional gender ideology led to an increase in self-efficacy. Self-efficacy, in turn, contributed positively to subjective well-being.

These results also confirm the hypothesis that among female students high in openness, a stronger endorsement of traditional gender ideology was associated with *decreased* perceptions of self-efficacy over the course of the transition. Put differently, endorsing a traditional gender ideology seems to harm those young women who are open for new experiences. For these women, openness rejecting traditional gender ideology positively contributed to their self-efficacy during the time of the developmental transition. As predicted, these effects were only found for female but not for male students. To this point, we do not know whether the dynamic interplay of openness to experience and traditional gender ideology on women's self-efficacy and well-being is restricted to young adulthood. Thus, the third study tested this effect in a sample of middle-aged women undergoing a different transition, namely re-entering work life after a maternal leave.

Study 3

Study 2 showed that the endorsement of traditional gender ideology was related to an increase in self-efficacy across time among young women who were low in openness during the developmental transition of graduating from high school. The opposite pattern was true for women high in openness. The goal of Study 3 was to replicate these findings for a different developmental transition in young and middle adulthood. Therefore, Study 3 tested the hypotheses in a three-month longitudinal study of women re-entering work life after a phase of parental leave. As in Study 1, participants completed three questionnaires during the transition: before re-entering work life (T1), immediately after actual job re-entry (T2), and two months after job re-entry (T3).

Method

1 **Procedure**

2 This study is part of a larger longitudinal project on successful re-entry into work life
 3 after maternity leave [REDACTED]
 4 [REDACTED] Participants were recruited via
 5 newspaper advertisements and by asking career advisers, human resource departments of large
 6 companies, daycare centers, midwives and pediatricians to distribute flyers. Conditions for
 7 participation were that women did not work at the time of recruitment due to a maternity leave
 8 but intended to return to work within the following weeks or months. For the present study, we
 9 used paper-and-pencil questionnaire data from three of the four measurement occasions.
 10 Questionnaire completion took about 90 minutes. Participation was voluntary and participants
 11 gave informed consent. Participants were reimbursed with 40 Swiss francs (at that time
 12 equivalent to 40 USD) at T1 and 20 Swiss francs at T3. At T2, women had the opportunity to
 13 enter a lottery with five cash prizes of 500 Swiss francs each.

14 **Participants**

15 $N = 297$ women aged 20 to 53 years ($M = 34.4$, $SD = 5.34$) participated at T1, $N = 266$ at
 16 T2, and $N = 235$ at T3. 74.8% of the women were Swiss residents, 10.2% were German
 17 residents, and 15% were Austrian residents. All of the participants had children (55% one child,
 18 33% two children, and 12% more than three children). Concerning educational background,
 19 58% reported that they had completed apprenticeship, 56% held a university degree, and 6% a
 20 PhD. They were employed in a broad range of occupations. On average, they worked $M =$
 21 21.46 hours per week ($SD = 9.1$). According to Massarelli (2009), Swiss, Austrian, and German
 22 mothers usually work part-time. Most of the women (97.0 %) had a partner, 77.4 % were
 23 married.

24 **Measures**

25 Consistent with Study 1, openness to experience and traditional gender ideology were

assessed at T1, immediately before the women re-entered work life. Self-efficacy beliefs were assessed at all three measurement occasions. In addition, we included T3-measurements of subjective well-being in our analyses. If not noted otherwise, items were rated on scales ranging from 1 (*not at all*) to 6 (*very much*).

Traditional Gender Ideology. Traditional gender ideology was assessed at T1 with a 28-item questionnaire (Cronbach's alpha = .85). Similar to Study 2, 15 items reflected normative gender role attitudes (Athenstaedt, 2000) and four items mother-child attitudes (Sieverding, 1990). Moreover, nine items assessed gender attitudes in an occupational context (Abele, Cohrs, & Dette, 2004; e.g., "*In general, women are less qualified than men for occupational competition*").

Openness to Experience. This construct was measured at T1 by using three items assessing openness to experience (Lang et al., 2001; Cronbach's alpha = .76).

Self-Efficacy. Self-efficacy was assessed at all three measurement occasions (T1-T3) using four items concerning the experience of self-efficacy in the context of the transition (e.g., "*I am confident that I will successfully manage the re-transition to working life*"). Cronbach's alpha was .85, .80, and .85 for T1, T2, and T3, respectively.

Positive and Negative Affect. Participants completed the positive (e.g., *enthusiastic, excited, proud*) and negative (e.g., *depressed, anxious, uneasy*) affect schedule at T3 (i.e., 7 items from PANAS; Watson, Clark, & Tellegan, 1988, and 5 items from the MDBF; Steyer, et al., 1994 were included). Participants indicated on a 5-point rating scale ranging from 1 (*not at all*) to 5 (*very much*) how they felt at the moment. Cronbach's alpha was .78 and .79 for the positive and negative affect scale, respectively.

Results

Consistent with findings from Study 2, openness to experience and traditional gender ideology were negatively associated ($r = -.17, p < .01$). Furthermore, there was a positive

relationship between self-efficacy and openness to experience. Finally, positive affect was negatively associated with negative affect and positively associated with self-efficacy (see Table 2).

Data analyses: Modeling change over time

Similar to Study 2, we used LGM to analyze individual trajectories of self-efficacy during the transition. We again examined the effects of openness to experience and traditional gender ideology on initial mean level of (intercept) and change in (slope) self-efficacy during the transition. In a first model, we analyzed the intercept and slope of self-efficacy with the transition across three measurement occasions. In a second model, we predicted the intercept and the slope of self-efficacy as a function of the interaction of openness to experience and traditional gender ideology. In the third model, we examined how positive and negative affect were affected by change in self-efficacy.

LGM 1: Change in transitional self-efficacy. A first model predicted linear change in self-efficacy across time (i.e., 0, 1, 2). The model fitted the data well ($N = 297$; $\chi^2(1) = 3.78$, $p = .052$; $CFI = .98$; $RMSEA = .09$, $p = .14$, and $SRMR = .02$). For self-efficacy, the model resulted in a significant positive mean slope, $M_{slope} = .06$, $p < .05$. This effect indicates a steady increase in self-efficacy across time. There was also a significant effect for the initial status of self-efficacy, $M_{intercept} = 4.62$, $p < .001$. Importantly, the significant variances of the intercepts and slopes ($M_{intercept} = .36$, $p < .001$; $M_{slope} = .11$, $p < .05$, respectively) indicate substantial variation across individuals in initial mean levels and trajectories of self-efficacy. Thus, in the next model, we predicted the trajectories of self-efficacy as a function of openness to experience and ideological orientation.

LGM 2: Interaction of openness to experience and traditional gender ideology. In a next step, a second model was computed to predict change in self-efficacy over time as a function of the interaction of openness to experience and traditional gender ideology. The test

revealed appropriate fit indices ($N = 297$; $\chi^2(4) = 7.73$, $p = .10$; $CFI = .98$; $RMSEA = .06$, $p = .36$, and $SRMR = .03$). First, the analyses yielded a main effect of openness to experience on intercept factor of self-efficacy ($\beta_{\text{intercept}} = .39$, $p < .001$). Second, the interaction term of openness to experience and traditional gender ideology negatively predicted an increase in self-efficacy ($\beta_{\text{slope}} = -.32$, $p < .05$). However, there was no significant interaction effect on the intercept factor ($\beta_{\text{intercept}} = -.02$, ns). Overall, this model accounted for 10% of the variance in initial level of self-efficacy and for 7% of the variance in change in self-efficacy across time. Figure 3 depicts the interaction effect of openness to experience and traditional gender ideology. Specifically, simple slope analyses indicate that endorsing traditional gender ideology was associated with an increase in self-efficacy across time for women low in openness but with a decrease for women high in openness ($B = -.11$, $SE = .02$; $p < .001$). However, the slope for rejecting traditional gender role beliefs was not significant.

LGM 3: Change in self-efficacy during the transition and well-being. In a third model, we added positive and negative affect to the model that was measured at T3. Similar to Study 1, positive and negative affect were predicted by change in self-efficacy across time. The model closely fitted the data ($N = 297$; $\chi^2(13) = 24.93$; $p = .02$; $CFI = .96$; $RMSEA = .06$, $p = .35$, and $SRMR = .04$). Consistent with Model 2, an increase in self-efficacy was positively predicted by the interaction of openness to experience and ideology ($\beta_{\text{slope}} = -.32$; $p < .05$). However, there were no other statistically significant main or interaction openness to experience and traditional gender ideology. Moreover, initial level of and increase in self-efficacy significantly predicted positive ($\beta_{\text{intercept}} = .20$; $p < .01$; $\beta_{\text{slope}} = .23$; $p < .01$) and negative affect ($\beta_{\text{intercept}} = -.17$; $p < .05$; $\beta_{\text{slope}} = -.24$; $p < .05$). Overall, the model accounted for 13% of the variance in initial level of self-efficacy and 9% of the variance in change in self-efficacy.

Brief Discussion of Study 3

The results of Study 3 partially replicate and extend results of Study 2 in a different sample of young and middle-aged women facing a different developmental transition. Women re-entering work after a maternity leave profited from endorsing traditional gender role beliefs if they were low in openness. These women profited from endorsing traditional gender role beliefs because it increased their level of self-efficacy over the time of the transition, which, in turn, contributed to their subjective well-being. By contrast, women who were high in openness experienced a *decrease* in their self-efficacy when they strongly endorsed a traditional gender ideology. Again, this indicates that endorsing a traditional gender-ideology has opposite effects for women during a developmental transition, depending upon their level of openness for new experiences.

General Discussion

In the present research, we predicted and found that individual differences in openness to experience modulate the adaptiveness of adopting specific ideological orientations. Specifically, we argued that women low in openness experience more threat from the uncertainty during developmental transitions and protect their self-efficacy and subjective well-being by adhering to traditional gender ideology. Three studies provided converging evidence for the proposed functional approach to ideology.

First, the results of our experimental study suggest that different levels of openness to experience moderate the impact of transitional uncertainty on self-efficacy and subjective well-being. More specifically, by experimentally inducing uncertainty about the transition from college to the work, Study 1 demonstrated that for women low in openness transitional uncertainty is more threatening by impairing their self-efficacy and subjective well-being. Second, two longitudinal real-life studies on educational and occupational transitions in young and middle adulthood yielded consistent findings. That is, women who were low in openness and strongly endorsed a traditional gender ideology showed an increase in self-efficacy and

1 subjective well-being during both kinds of developmental transitions. In contrast, women who
2 were high in openness and rejected traditional gender ideology showed an increase in self-
3 efficacy and subjective well-being. Taken together, the present research suggests that endorsing
4 an ideology that provides strong behavioral guidelines can help women low in openness to
5 master the challenges of a developmental transition. However, the results also demonstrate that
6 endorsing traditional gender ideology impairs the self-efficacy and well-being of women who
7 approach transitions with openness.

8 In the context of the transition from high school to college or work, women must enter
9 competitive contexts that present barriers to career progression. There are systematic differences
10 between men and women in occupational patterns. For example, despite identical qualifications,
11 women are more likely than men to occupy low-status jobs (Adler, 1993; Powell, Butterfield, &
12 Parent, 2002). In addition, there are also striking differences in occupational outcomes: Women
13 are disadvantaged with respect to income (Lyness & Heilman, 2006). Also, in male-dominated
14 fields such as prestigious jobs (e.g., leadership positions), women are often confronted with what
15 Eagly and Carli (2007) called a “labyrinth.” For example, women may be confronted with
16 threatening gender stereotypes that lower the perceived likelihood of their achieving career goals
17 (von Hippel, Issa, Ma, & Stokes, 2011). Moreover, women are also more likely than men to be
18 confronted with conflicting career and family goals (Eccles, 2009). Thus, compared to men,
19 women may experience greater uncertainty during career-related transitions. As a consequence,
20 educational and occupational transitions pose a challenge to women’s self-efficacy and well-
21 being. Traditional gender ideology, however, may serve a protective function for women low in
22 openness, who try to avoid uncertainty by restricting developmental options. In this situation,
23 traditional gender ideology provides an explanation for an unequal gender status quo and as such
24 reduces the burden on woman to excel, for example, in the academic domains. Nonetheless,
25 traditional gender ideology hinders women from achieving high-status positions in the labor

force by encouraging them to “stay in their place” (Bem & Bem, 1970). Accordingly, our results also suggest that women with a need to approach new challenges show an increase in self-efficacy during the transition from high school to college or work when they reject traditional gender ideology. Thus, by rejecting traditional gender roles, these women are more likely to actively and successfully shape their careers, thereby increasing their sense of occupational self-efficacy.

Perceived disadvantage – such as not having access to the same resources as other groups – reduces psychological well-being (Crocker, Major, & Steele, 1998). However, research on system justification (Jost & Hunyady, 2005) suggests that people often adopt ideologies that defend, legitimize, and rationalize the status quo. Importantly, there is also evidence that endorsing an ideology legitimizing such disadvantages might be beneficial. For example, Major and colleagues (Major, Gramzow, McCoy, Levin, Schmader, & Sidanius, 2002) have shown that low-status groups that accept a legitimizing ideology show reduced awareness of being the victim of discrimination. Extending these results, the present research highlights the interplay of individual differences in openness to experience and traditional gender ideology on self-efficacy and subjective well-being in the context of developmental transitions. More specifically, the present research suggests that women low in openness may avoid the uncertainty associated with developmental transitions by endorsing traditional gender ideology that legitimizes inequality between men and women. By doing so, these women maintain and increase their perception of self-efficacy and subjective well-being in times of change and uncertainty.

Limitations of the present research

The limitations of this research involve the conceptualization and measurement of traditional gender ideology and openness to experience as stable individual difference variables as well as the design of the studies. More specifically, we do not know whether traditional gender ideology and/or openness to experience changed during the transition. Moreover, due to

the design of Study 2 and 3, we were not able to compare our sample of students graduating from high school to a control group that was not involved in a transition. The results also point to an increase in self-efficacy and subjective well-being, but provide no objective criteria about how well the women in the two studies dealt with the respective transition. Future analyses should include objective markers of success in mastering developmental transitions.

Conclusion

In conclusion, the present research addressed two main issues: First, openness to experience moderates the effects of uncertainty associated with educational and occupational developmental transitions on self-efficacy and subjective well-being in young and middle adulthood. Second, the psychological consequences of adopting a traditional gender ideology during educational and occupational developmental transitions differ for women who are either motivated to approach or to avoid new and unknown situations (i.e., who are high or low in openness). Endorsing a traditional gender ideology entails positive psychological consequences for women low in openness but negative psychological consequences for women high in openness. Thus, some women might adopt traditional gender role ideologies - that generally disadvantage women compared to men - in order to increase predictability and control in times of high uncertainty. Individual differences in openness to experience reflect one motivational mechanism that explains why people adopt ideologies during challenging transitions even when they run against their interests. In this context, traditional gender ideology can serve to protect women who are low in openness from the potential threats associated with transitioning into a new and unknown situation. To conceptualize both the chances and risks of adhering to traditional gender roles and to take into consideration how personality may influence which consequences prevail seems to be a promising route to follow for better understanding the developmental pathways of female careers.

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- 6

Footnotes

1 The stimulus material was pretested in a pilot study. Twenty-seven female participants
2 aged 18 to 29 years ($M = 25.1$, $SD = 2.1$) were randomly assigned to read the article about
3 uncertainty ($n = 12$) or the article about safety measures in work environments ($n = 15$) and
4 subsequently responded to some questions assessing feelings of uncertainty. Results indicate
5 that the uncertainty manipulation was successful: After having read the article, participants in the
6 uncertainty group indicated that they felt more uncertain ($M = 4.92$, $SD = 1.24$) than those in the
7 control group ($M = 2.87$, $SD = 1.19$), $t(25) = 4.37$, $p < .001$ (*“How insecure do you feel after*
8 *reading the text?”*; scale from 1 = *not at all uncertain* to 7 = *very uncertain*). In addition,
9 participants in the uncertainty group perceived their career prospects as more uncertain ($M =$
10 4.92 , $SD = .90$) compared to participants in the control group ($M = 3.87$, $SD = 1.19$), $t(25) =$
11 2.53 , $p < .02$ (*“How do you assess your own career prospects?”*; scale from 1 = *not at all*
12 *uncertain* to 7 = *very uncertain*).
13
14

Table 1

Intercorrelations of Variables in Study 2 for the Female and Male Student Subgroups

Female Students ($n = 333$)	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. Openness to Experience (T_1)	4.42	.91	1				
2. Traditional Gender Ideology (T_1)	2.94	.63	-.20***	1			
3. Self-Efficacy (T_1)	4.19	.70	.32***	-.12*	1		
4. Self-Efficacy (T_2)	4.33	.70	.07	.03	.57***	1	
5. Self-Efficacy (T_3)	4.27	.69	.17*	-.06	.59***	.66***	1
6. Well-Being (T_3)	4.25	.75	.01	-.01	.14*	.27***	.35***
Male Students ($n = 187$)	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. Openness to Experience (T_1)	4.48	.82	1				
2. Traditional Gender Ideology (T_1)	3.43	.65	.03	1			
3. Self-Efficacy (T_1)	4.40	.64	.37***	.02	1		
4. Self-Efficacy (T_2)	4.48	.66	.21*	.16	.56***	1	
5. Self-Efficacy (T_3)	4.55	.67	.27**	-.01	.52***	.62***	1
6. Well-Being (T_3)	4.26	.76	.06	-.14	.10	.24*	.30**

Note. * $p < .05$; ** $p < .01$; *** $p < .001$

Table 2

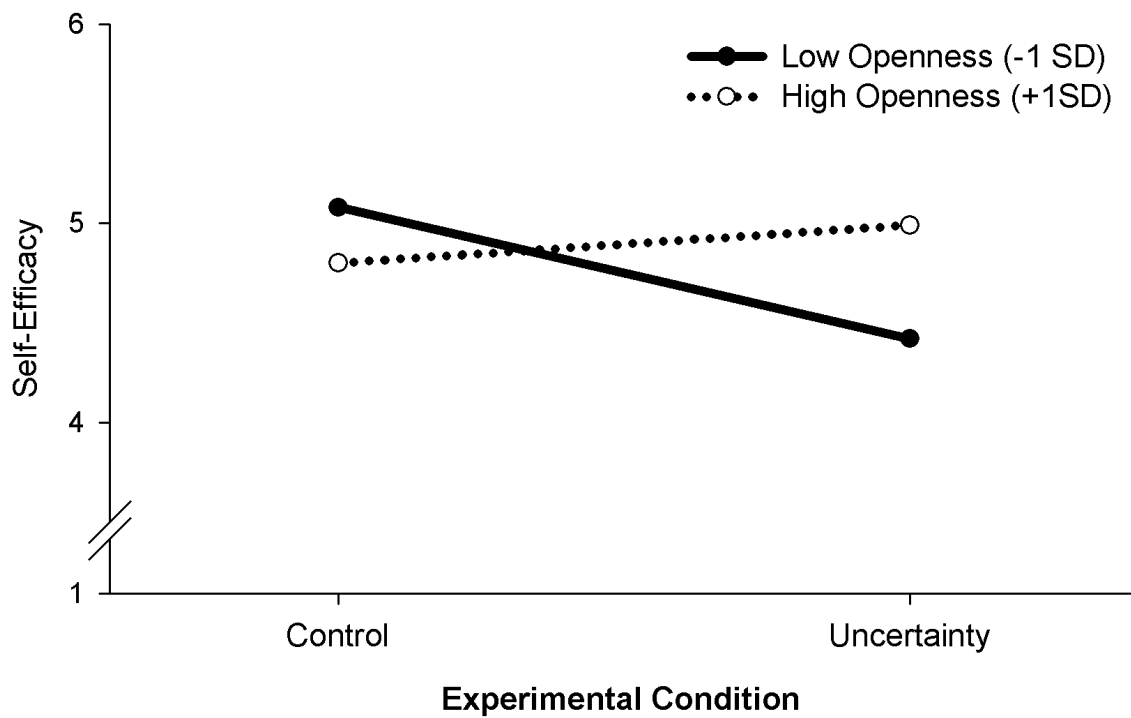
Intercorrelations of Variables in Study 3 for Women Re-entering Work Life

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6
1. Openness to Experience (T1)	3.66	.81	1					
2. Traditional Gender Ideology (T1)	2.43	.64	-.17**	1				
3. Self-Efficacy (T1)	4.53	.78	.26***	-.13*	1			
4. Self-Efficacy (T2)	4.62	.85	.22***	-.18**	.62***	1		
5. Self-Efficacy (T3)	4.76	.85	.27***	-.03	.58***	.67***	1	
6. Positive Affect (T3)	3.69	.61	.09	-.06	.25***	.33***	.34***	1
7. Negative Affect (T3)	2.15	.73	.10	.06	-.16*	-.26***	-.25***	-.57***

Note. * $p < .05$; ** $p < .01$; *** $p < .001$

1

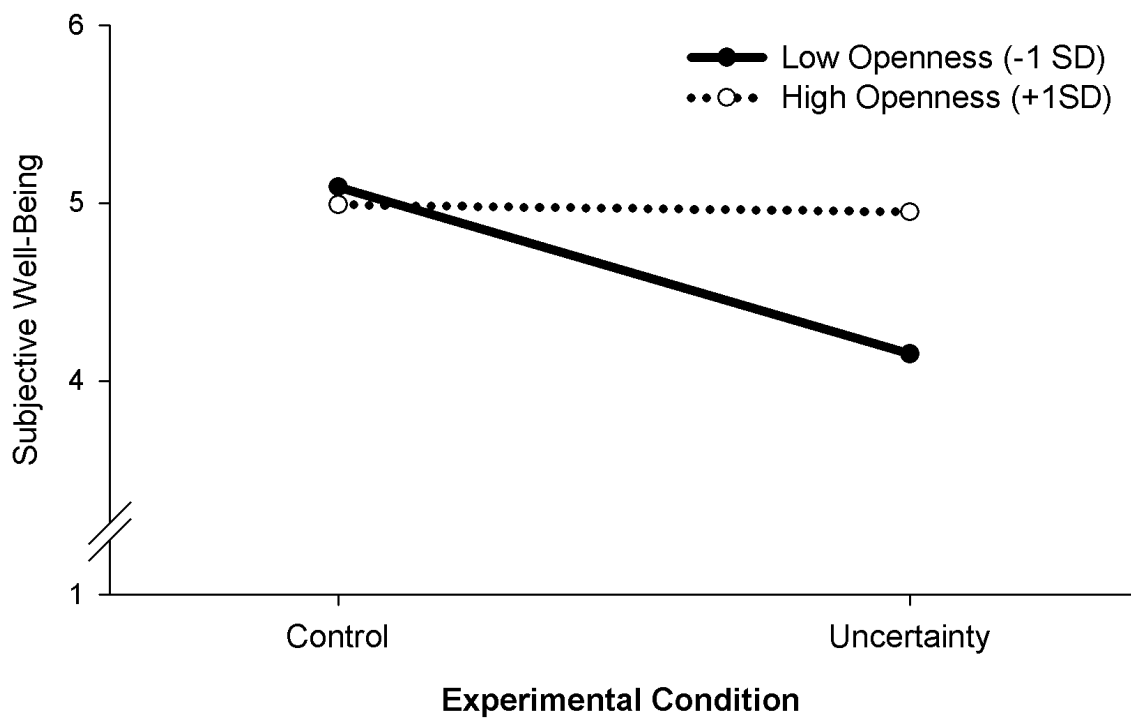
(a)



2

3

(b)



4

5

6

7

Figure 1. Interaction effect of experimentally induced uncertainty (control vs. uncertainty) x openness to experience (± 1 SD) on (a) self-efficacy and (b) well-being, Study 1.

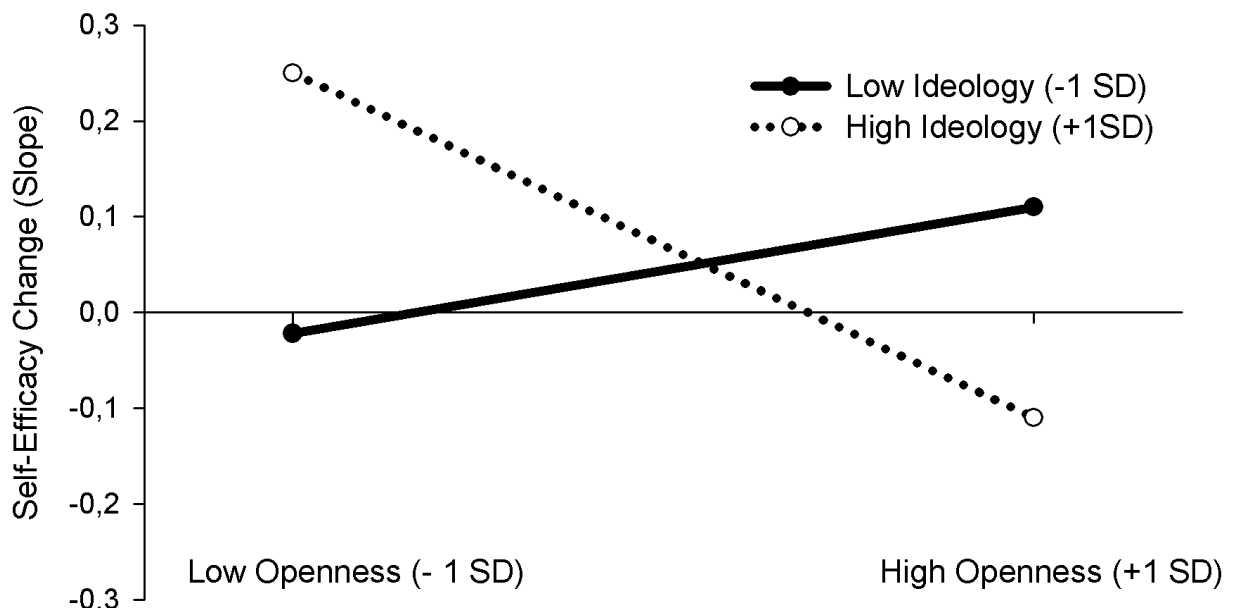


Figure 2. Interaction effect of openness to experience (+/- 1 SD) and endorsement of traditional gender ideology (+/- 1 SD) on change in self-efficacy across time for female students, Study 2.

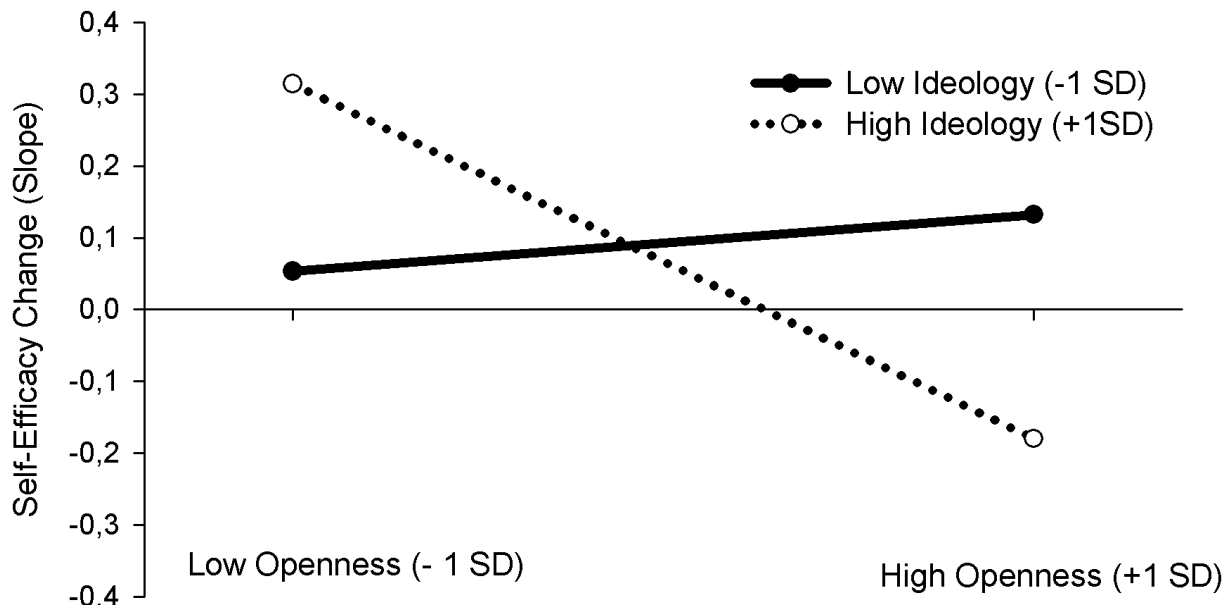


Figure 3. Interaction effect of openness to experience (+/- 1 SD) and endorsement of traditional gender ideology (+/- 1 SD) on change in self-efficacy across time for women re-entering working life, Study 3.